

WHAT IS CLAIMED IS:

1. A wireless communication apparatus comprising:

a plurality of fine functional elements each 5 having communication means for data transmission and reception by using radio waves or light and one or more means other than the communication means; and

10 a base station for controlling and collectively managing said fine functional elements through communications with said fine functional elements,

15 wherein one or more means other than the communication means are activated through communications of one of said fine functional elements received control information from said base station with another of said fine functional elements via the communication means.

20 2. A wireless communication apparatus according to claim 1, wherein each of said fine functional elements utilizes, as an energy source for activating one or more means other than the communication means, power generating means 25 possessed by the fine functional element or energy of radio waves or light sent from said base station.

3. A wireless communication apparatus
according to claim 1, wherein an element for
realizing the communication means and an element
for realizing one or more means other than the
5 communication means are formed on a single
substrate.

4. A wireless communication apparatus
according to claim 1, wherein one or more means
10 other than the communication means include
imaging means, displaying means, storing means
and arithmetic processing means.

5. A wireless communication apparatus
15 according to claim 1, wherein said base station
transmits the control information to one of said
fine functional elements which activates one or
more means other than the communication means in
accordance with the control information, and
20 transmits information obtained by one or more
means other than the communication means to said
base station, and said base station processes the
transmitted information.

25 6. A wireless communication apparatus
according to claim 1, wherein the imaging means
comprises a fine sphere lens having a partial

flat plane, a parallel flat plate parallel to the
partial flat plane, and a flat circuit board
formed with an imaging element and a
communication circuit to be disposed on the
5 partial flat plane.

7. A wireless communication method for a
wireless communication apparatus, the apparatus
comprising:

10 a plurality of fine functional elements each
having communication means for data transmission
and reception by using radio waves or light and
one or more means other than the communication
means; and

15 a base station for controlling and
collectively managing said fine functional
elements through communications with said fine
functional elements,

20 wherein one or more means other than the
communication means are activated through
communications of one of said fine functional
elements received control information from said
base station with another of said fine functional
elements via the communication means.

25

8. A wireless communication method
according to claim 7, wherein each of said fine

functional elements utilizes, as an energy source for activating one or more means other than the communication means, power generating means possessed by the fine functional element or 5 energy of radio waves or light sent from said base station.

9. A wireless communication apparatus comprising:

10 a functional element group including a plurality of functional elements each having a first function for performing wireless communication by using light or radio waves and a second function different from the wireless 15 communication,

wherein the second function of each of the functional elements is a single function, and said functional element group provides as a whole one or more of the second function through a 20 cooperative work of each of the functional elements using the first function.

10. A wireless communication apparatus according to claim 9, wherein said functional 25 element group forms a network system in which the wireless communication among the functional elements is performed by using the first function.

11. A wireless communication apparatus according to claim 9, wherein the functional elements provide, as the second functions, sensing functions for measuring different types 5 of physical amounts.

12. A driving method for a wireless communication apparatus, wherein:

the wireless communication apparatus is used 10 which comprises a functional element group including a plurality of functional elements each having a first function for performing wireless communication by using light or radio waves and a second function different from the wireless 15 communication;

the second function of each of the functional elements is a single function; and each of the functional elements is disposed at a desired position to provide as a whole one 20 or more of the second function through a cooperative work of each of the functional elements using the first function.

13. A wireless communication apparatus 25 according to claim 1, wherein:

a base station is provided for collectively managing the functional elements constituting a

functional element group; and
said base station controls the functional
element group through the wireless communication
among the functional elements, or receives data.